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B. Hilliard

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Gene M. NITSCHKE

Application No.: 09/411,642

Filed: October 4, 1999

For: METHOD AND SYSTEM TO ESTABLISH DEDICATED INTERFACES FOR THE  
MANIPULATION OF SEGMENTED IMAGES



Group Art Unit: 2173

Examiner: C. Thai

Docket No.: 103045

REQUEST FOR RECONSIDERATION

Director of the U.S. Patent and Trademark Office  
Washington, D.C. 20231

Sir:

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In reply to the Office Action mailed February 26, 2002, reconsideration of the rejection is respectfully requested in light of the following remarks.

Claims 1-21 are pending.

Initially, it is noted that Applicant filed two PTO-1449 with the Information Disclosure Statement filed on October 4, 1999 with 14 cited references, as evidenced by the attached postcard receipt which acknowledges receipt thereof. A copy of the Information Disclosure Statement (IDS) filed on October 4, 1999, along with a copy of each of the 14 references, is attached for the Examiner's convenience. Applicant respectfully requests prompt treatment of that IDS.

The Office Action rejects claims 1-3, 6, 9-14, 16 and 21 under 35 USC §103(a) as unpatentable over U.S. Patent 5,787,194 to Yair in view of U.S. Patent 6,341,183 to Goldberg. This rejection is respectfully traversed.

Yair is directed to an image processing apparatus for segmenting an image an image into image portions containing single characters for subsequent storage and processing by an OCR apparatus. Ssee col. 1, lines 8-14 of Yair. Yair discloses that an OCR input image may contain an arbitrary number of connected components, where each component could represent several characters joined together, a single character, a part of a character, noise, or any other piece of image. See col. 2, lines 24-28 of Yair. Yair also discloses that it is essential for any OCR application to handwritten data to be able to handle both connected and broken characters in the same field of data. See col. 1, lines 36-39 of Yair. Yair is directed to solving the problem of segmentation of a field into its individual characters, such as found in tax forms, zip codes, census forms and credit card slips. See col. 2, lines 1-7 of Yair. Examples of handwritten individual characters are shown in Figs. 6 and 7 of Yair.

Yair does not disclose what is recited in claim 1. Claim 1 recites "a system that assembles a dedicated user interface that allows an input segmented image to be manipulated." Yair starts with an image capture device 100, and then uses a segmentation module 140, shown in general terms in Fig. 1 and in detail in Fig. 2. Yair is directed to segmenting an image whereas, in claim 1, the image is already segmented. The allegation that the recited "segmentation classification association circuit" is found in Yair overlooks the fact that the classification logic 220 in Yair is used to segment the image input to the segmenter 140, not to associate a segmentation classifier and at least one segment of the input segmented image. Yair's classification portion of segmenter 140 is not working on a segmented image. Rather, it is segmenting an unsegmented image.

Accordingly, Yair does not teach a segmentation classification association circuit that associates a segmentation classifier and at least one segment of an input segmented image, as asserted in the Office Action. At best, Yair teaches segmenting an image using, among other things, classification logic.

Goldberg provides a graphical user interface-based image acquisition interface for CCD camera control and image acquisition. The functions performed by Goldberg's device include CCD detector control, image display and manipulation, and file saving and loading. See col. 3, lines 60-64 of Goldberg. Columns 5-8 of Goldberg disclose image display and manipulation. These functions include zooming, scaling for display, point and region selection, lineout display, and color table display, gamma scaling, and background subtraction.

Goldberg has nothing to do with OCR or image segmentation. Although Goldberg has image processing tools, Goldberg fails to provide an image processing tool association circuit that determines one image processing tool corresponding to any segmentation classifier, let alone "the segmentation classifier" recited in claim 1.

Moreover, the Office Action fails to provide any motivation to combine these two disparate references. Federal Circuit case law makes it abundantly clear that a showing of motivation to combine references must be clear and particular, and that broad, conclusory statements about the teaching of multiple references, standing alone, are not "evidence." The Office Action must also demonstrate that modifying one reference in view of another reference is even feasible. Moreover, the case law requires that for motivation to be proper, showing that something is feasible is not enough. Just because something is feasible does not mean that it is desirable or that one of ordinary skill in the art would be motivated to do what is feasible. The Federal Circuit has repeatedly pointed out that motivation to combine references requires a showing not just of feasibility, but also of desirability.

The Office Action completely fails all of the aforementioned case law requirements to constitute a showing of proper motivation to combine Yair and Goldberg. In fact, the Office Action fails to even indicate what would motivate one of ordinary skill in the art to combine these two references. Rather, the Office Action merely states what will happen if the

references are combined. The Office Action alleges that the combination would provide real-time data analysis support for images acquired during the alignment of image acquisition analysis.

Applicant respectfully contends that the Office Action provides that there is no proper motivation to combine Yair and Goldberg. Applicant also respectfully notes that there are no displays disclosed in Yair. There is no need for a display or a graphical user interface in Yair. Yair captures an image, segments the image, OCR's the segmented image and stores the image. Nor does Yair disclose that it uses fully customizable image processing tools provided by an interactive data language programming environment for which Goldberg's GUI to operate in the IDL environment. Moreover, Yair's device shows no indication that it needs a graphical user interface, and presumably works well without such an interface.

Moreover, even if it were feasible and desirable to combine these two references, which the Office Action has not demonstrated, the combination would not render the claimed invention obvious because, even if combined, the combination would still not have the features recited in claim 1, including a segmented image, a classification association circuit, as recited, or an image processing tool association circuit that determines at least one image processing tool corresponding to the segmentation classifier.

Similar comments apply to independent claims 10 and 12. Claim 10 recites a storage medium that stores information controlling assembly of a dedicated user interface that allows manipulation of an input segmented image, with information that associates a segmentation classifier and at least one segment of the input segmented image, and information that determines at least one image processing tool corresponding to the segmentation classifier. Claim 12 recites the method of assembling a dedicated user interface for manipulation of an input segmented image by determining a segmentation classifier associated with at least one segment of the input segmented image and associating at least one image processing tool with

the at least one segment of the input segmented image. Neither Yair nor Goldberg, alone or in combination, disclose these features of claims 10 or 12 for the reasons stated above regarding the corresponding subject matter of claim 1. Moreover, as pointed out above, the Office Action provides no proper motivation to combine those two references.

Claims 2, 11, and 13 further distinguish over Yair and Goldberg. Claim 2 recites the additional feature of a user interface assembly circuit that assembles at least one selectable interface widget into at least one user interface based on the at least one image processing tool corresponding to the segmentation classifier. Neither Yair nor Goldberg disclose or suggest an image processing tool corresponding to an image segmentation classifier. The Office Action fails to demonstrate a proper motivation for combining these two references, and even if combined, because of the absence of other claimed features from both references, for reasons set forth above, the reference combination would not render the claimed invention obvious.

Similar comments apply to claims 11 and 13, which recite similar features to that recited in claim 2. It is noted that claim 11 does not recite a widget.

Claim 6 depends from claim 1 and claim 16 depends from claim 12. Neither Yair nor Goldberg discloses the additional feature recited in these claims. Yair, which is alleged in the Office Action to show this feature, only discloses a segmentation classifier. See Fig. 2, and the associated disclosure of Yair. Yair does not disclose both an image segmenter and a segmentation classifier, as recited in claims 6 and 16. Yair does not segment an image and classify the segmented image, as recited in claims 6 and 16.

For at least the reasons outlined above, the combination of Yair and Goldberg fails to teach, disclose or suggest all of the features of claims 1-21. Nor has the Office Action met the standards required by the APA or provided evidence establishing a prima facie case of obviousness of claims 1-21 based on Yair and Goldberg. Thus, the combination of Yair and

Goldberg fails to render obvious the subject matter of claims 1-21 under 35 U.S.C. §103(a).

Withdrawal of the rejection of claims 1-3, 6, 9-14, 16 and 21 as unpatentable over the combination of Yair and Goldberg is respectfully solicited.

The Office Action rejects claims 4, 5, 15 and 20 under 35 USC §103(a) as unpatentable over Yair in view of Goldberg, and further in view of U.S. Patent 5,710,877 to Marimont. This rejection is respectfully traversed.

The Yair-Goldberg reference combination fails to render the claims from which claims 4, 5, 15 and 20 depend unpatentable. Marimont does not remedy the deficiencies in the Yair-Goldberg reference combination outline above. Claims 4, 5, 15 and 20 are patentable over the asserted combination.

Marimont concerns generating a data structure representation of an original image that captures geometric and topological information about regions in the image and spatially index those regions. In other words, Marimont inputs an image that is unsegmented and segments the image. See col. 2, lines 33-64 of Marimont. However, as pointed out above, the recited input image is already segmented. Yair segments an unsegmented image into image portions, each containing a single character for OCR purposes. There would be no incentive to modify Yair (taken alone or in view of Goldberg), who has already segmented the image, and feed that segmented image into Marimont, which is designed to segment an unsegmented image.

The Office Action fails to present any motivation to make the asserted combination. All the Office Action does is allege what will happen when such a combination is made. The Office Action asserts that by using Marimont to modify Yair-Goldberg, the resulting system would permit user interaction with the structures in an original image through image structure mapping.

However, as pointed out above, there is no proper motivation shown to combine these three references. Moreover, there is a disincentive to combine Marimont with the two other references because the Yair image is already segmented. There is no showing why one would want to segment an already segmented image when none of the references teach this feature. Additionally, Yair is not concerned with a graphical display and expresses no need for one. Marimont is concerned with photos (shown in Fig. 6) suitable for this imaging system, not handwriting, which is the focus of Yair. The Office Action fails to demonstrate the feasibility of the proposed reference combination as well as its desirability with such disparate input images and goals (OCR of handwriting versus computer enhancement of photographs).

For at least the reasons outlined above, the combination of Yair, Goldberg and Marimont fails to teach, disclose or suggest all of the features of claims 1-21. Nor has the Office Action met the standards required by the APA or provided evidence establishing a prima facie case of obviousness of claims 1-21 based on Yair, Goldberg and Marimont. Thus, the combination of Yair, Goldberg and Marimont fails to render obvious the subject matter of claims 1-21 under 35 U.S.C. §103(a). Withdrawal of the rejection of claims 4, 5, 15 and 20 under 35 U.S.C. §103(a) as unpatentable over the combination of Yair, Goldberg and Marimont is respectfully solicited.

The Office Action rejects claims 7, 17 and 18 under 35 USC §103(a) as unpatentable over Yair in view of Goldberg, and further in view of U.S. patent 6,026,182 to Lee. This rejection is respectfully traversed.

Claims 7, 17 and 18 are patentable over Yair and Goldberg for the reasons stated above regarding claims 1 and 12. Moreover, Lee does not supply the deficiencies outlined above in Yair and Goldberg. Therefore, for these reasons alone, claims 7, 17 and 18 patentably define over Yair, Goldberg and Lee.

Lee is directed to compressing digital video signals, and includes a method of segmenting or identifying selected objects from other objects within a video image frame. A user forms an interior outline within the interior object perimeter and the interior outline is expanded automatically to form an exterior outline. See col. 3. lines 49-67 of Lee. The segmentation method operates on motion pictures and tracks objects in subsequent frames.

The Office Action fails to provide any proper incentive to modify the Yair-Goldberg combination in view of Lee. Instead, the Office Action merely states what would result from such a combination of references, which allegedly is a predefined configuration tool available to image processing toolbox end user.

This completely violates the mandate of the case law cited above, which requires that the Office Action provide proper motivation to combine these references, including not only the feasibility of the combination, but also desirability of the combination.

Moreover, the Office Action fails to demonstrate why one of ordinary skill in the art would desire to modify Yair, which already has segmented the handwriting image, by using a video image segmentation which starts with a hand drawn interior outline and expands it automatically.

Moreover, even if the references were combined, the Office Action fails to demonstrate that the segmentation techniques of Yair, Goldberg and Lee are compatible, or how they would work when combined, let alone why the combined image segmentation would be desirable.

For at least the reasons outlined above, the combination of Yair, Goldberg and Lee fails to teach, disclose or suggest all of the features of claims 1-21. Nor has the Office Action met the standards required by the APA or provided evidence establishing a prima facie case of obviousness of claims 1-21 based on Yair, Goldberg and Lee. Thus, the combination of Yair, Goldberg and Lee fails to render obvious the subject matter of claims 1-21 under



35 U.S.C. §103(a). Withdrawal of the rejection of claims 7, 17 and 18 under 35 U.S.C. §103(a) as unpatentable over the combination of Yair, Goldberg and Lee is respectfully solicited.

The Office Action rejects claims 8 and 19 under 35 USC §103(a) as unpatentable over Yair in view of Goldberg, and further in view of U.S. Patent 6,009,196 to Mahoney. This rejection is respectfully traversed.

Mahoney is directed to analyzing image data, representing images containing text, to partition the image into running and non-running text regions and to further classify the non-running text regions as a horizontal sequence, a vertical sequence or a table.

Claims 8 and 19 are patentable over Yair and Goldberg or the reason stated above regarding claims 1 and 12. Additionally, Mahoney does not cure the defects in the Yair-Goldberg combination. Thus, for the reasons above, claims 8 and 19 patentably define over Yair, Godberg and Mahoney.

The Office Action also fails to make out a prima facie case of obviousness because it does not provide proper motivation to combine Mahoney with Yair and Goldberg. In fact, the Office Action gives no reason to combine the references. Instead, the Office Action just states what would happen if the references were to be combined, i.e., the combination would provide more enhanced classifier tools to an end user.

The Office Action fails to demonstrate that combining these references is feasible and fails to demonstrate that combining these reference would be desirable. Mahoney is directed to page layout analysis, which is taught by Mahoney to be divided into two broad categories, i.e., geometric layout analysis and logical structure analysis. See col. 1, lines 52-67 of Mahoney. The Office Action fails to demonstrate that either of these page layout analyses categories is relevant to Yair's optical character recognition of handwritten data or printed data, or to Goldberg's alignment of an interferometer, for example.

Applicant respectfully submits that one of ordinary skill in the art would not have found it feasible and desirable to modify Yair and Goldberg in view of Mahoney, let alone to have picked only a certain portion of Mahoney to modify the Yair-Goldberg combination. The only motivation to combine these references is hindsight learned from reading Applicant's disclosure, and this is not a proper basis on which to combine references in a rejection based on 35 USC §103(a).

For at least the reasons outlined above, the combination of Yair, Goldberg and Mahoney fails to teach, disclose or suggest all of the features of claims 1-21. Nor has the Office Action met the standards required by the APA or provided evidence establishing a prima facie case of obviousness of claims 1-21 based on Yair, Goldberg and Mahoney. Thus, the combination of Yair, Goldberg and Mahoney fails to render obvious the subject matter of claims 1-21 under 35 U.S.C. §103(a). Withdrawal of the rejection of claims 8 and 19 as unpatentable over the combination of Yair, Goldberg and Mahoney is respectfully solicited.

In view of the foregoing amendments and remarks, Applicant submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1- 21 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,



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JAO:RJW/ala

Enclosures:

Information Disclosure Statement and two Forms PTO-1449, with copies of 14 references cited, filed October 4, 1999, and with postcard receipt.

Date: March 14, 2002

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